

REMARKS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 15 and 20-22 are cancelled. Claims 13, 14 and 16-19 were withdrawn by the Examiner. Claims 1-14 and 16-19 are pending.

I. Rejection under 35 U.S.C. § 102

In the Office Action, at page 2, numbered paragraph 2, claims 1, 15 and 20-22 were rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 4,780,067 to Suzuki et al. Claims 15 and 20-22 are cancelled. This rejection is respectfully traversed because Suzuki does not discuss or suggest:

two eccentric units respectively provided in the compression chambers so as to be fitted over the rotating shaft, the two eccentric units being operated so that one of the two eccentric units is positioned eccentrically from the rotating shaft to perform a compression operation while the other eccentric unit is positioned concentrically with the rotating shaft to perform an idle operation, according to a rotating direction of the rotating shaft,

as recited in independent claim 1.

As a non-limiting example, the present invention according to claim 1, for example, is directed to a variable capacity rotary compressor including a housing, a rotating shaft, two eccentric units, roller pistons, vanes, and a path control unit. The two eccentric units are provided in compression chambers of the housing so as to be fitted over the rotating shaft. The two eccentric units are operated so that one of the two eccentric units is positioned eccentrically from the rotating shaft to perform a compression operation while the other eccentric unit is positioned concentrically with the rotating shaft to perform an idle operation, according to a rotating direction of the rotating shaft. Vanes installed in the compression chambers reciprocate in a radial direction while being in contact with an outer surface of the roller piston, and the path control unit controls a refrigerant suction path.

Suzuki discusses a multi-cylinder rotary compressor which includes a crank shaft secured to the rotor of the electric motor 1 which is drivingly connected to a compressor unit 3. The compressor unit 3 has an upper cylinder 6 and a lower cylinder 7 covered by upper and lower bearings 9 and 10. The crank shaft 2 has two eccentric lobes 2a and 2b formed thereon which are angularly separated from one another by 180 degrees with respect to the axis of the crank shaft 2. Two rolling pistons 11 and 12 loosely fit on the lobes 2a and 2b, respectively, so as to be able freely rotate on the lobes. When the crank shaft 2 is rotated, the rolling pistons 11

and 12 roll along the inner surfaces of the cylinders 6 and 7, respectively. Suzuki further discusses that when the eccentric lobes 2a and 2b rotate about the inside of the cylinders 6 and 7, the rolling pistons 11 and 12, which are free to rotate on the eccentric lobes 2a and 2b, roll along the inner surfaces of the cylinders 6 and 7. The motion of the rolling pistons produces a progressive increase in the size of the suction chamber 16 which causes refrigerant gas to be sucked into the cylinder 6 and 7 through the suction pipes 19 and 20, and the motion of the rolling pistons produces a progressive decrease in the size of compression chamber 17. The inside of each cylinder 6 and 7 is divided into the suction chamber 16 and the compression chamber 17, the chambers 16 and 17 being divided by a reciprocating vane 13.

While Suzuki discusses that the suction chamber 16 increases in size and the compression chamber 17 decreases in size due to the motion of the rolling pistons, Suzuki does not discuss or suggest that two eccentric units are operated so that one of the two eccentric units is positioned eccentrically from the rotating shaft to perform a compression operation while the other eccentric unit is positioned concentrically with the rotating shaft to perform an idle operation, according to a rotating direction of the rotating shaft. As shown in Fig. 2, second eccentric lobe 2b is positioned eccentrically from the rotating shaft 2. However, Suzuki does not discuss or suggest that a second eccentric unit, for example, first eccentric lobe 2a, is positioned concentrically with the rotating shaft. Suzuki includes no discussion of first eccentric lobe 2a being positioned concentrically with the rotating shaft, while second eccentric lobe 2b is positioned eccentrically from the rotating shaft, according to the rotating direction of the rotating shaft.

The Examiner cites col. 4, lines 37-59 in alleging that Suzuki discusses that two eccentric units are operated so that one is positioned eccentrically to perform a compression operation while the other is positioned concentrically to perform an idle operation. However, col. 4, lines 37-59 merely discuss that the motion of the rolling pistons produces an increase in the size of suction chamber 16, causing a subsequent decrease in the size of chamber 17, and discusses that suction chamber 16 and compression chamber 17 are each included in each of the cylinders 6 and 7. Further, as shown in Fig. 2, suction chamber 16 is merely separated from compression chamber 17 by vane 13. Suzuki does not, however, discuss or suggest that one of the eccentric lobes 2a and 2b is positioned eccentrically from the rotating shaft to perform a compression operation, while the other of the eccentric lobes 2a and 2b is positioned concentrically with the rotating shaft to perform an idle operation. Suzuki is silent as to a second lobe being positioned concentrically.

Further, Suzuki does not discuss or suggest that the eccentric or concentric positioning of either first or second eccentric lobe 2a and 2b occurs according to a rotating direction of the

rotating shaft. Suzuki does not discuss that the positioning of one of the two eccentric lobes 2a and 2b occurs based off of a rotating direction of the rotating shaft.

Therefore, as Suzuki does not discuss or suggest, "two eccentric units respectively provided in the compression chambers so as to be fitted over the rotating shaft, the two eccentric units being operated so that one of the two eccentric units is positioning eccentrically from the rotating shaft to perform a compression operation while the other eccentric unit is positioned concentrically with the rotating shaft to perform an idle operation, according to a rotating direction of the rotating shaft," as recited in independent claim 1, independent claim 1 patentably distinguishes over the reference relied upon. Accordingly withdrawal of the § 102(b) rejection is respectfully requested.

II. Allowable Subject Matter

Applicants are appreciative of the indication by the Examiner that claims 2-12, which are objected to, would be allowable if rewritten in independent form. As independent claim 1 is believed to be allowable, claims 2-12 were not rewritten in independent form.

Conclusion

In accordance with the foregoing, claims 15 and 20-22 have been cancelled. Claims 1-14 and 16-19 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 5/14/07

By: Kari P. Footland

Kari P. Footland
Registration No. 55,187

1201 New York Avenue, NW, 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501 S&H Form: (02/05)